REMARKS

The Official Action mailed June 2, 2005, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicants respectfully submit that this response is being timely filed.

Claims 1-17, 19-30 and 47-58 are pending in the present application, of which claims 1-12, 19, 20, 47 and 48 are independent. The independent claims have been amended to better recite the features of the present invention, and dependent claims 53-56 have been amended to correct minor matters of form. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 3 of the Official Action rejects claims 47, 48 and 53-58 as anticipated by JP 07-038113 to Morosawa. The Applicants respectfully submit that an anticipation rejection cannot be maintained against the independent claims of the present application, as amended.

As stated in MPEP § 2131, to establish an anticipation rejection, each and every element as set forth in the claim must be described either expressly or inherently in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The Applicants respectfully submit that Morosawa does not teach the features of the independent claims of the present invention, either explicitly or inherently. The Official Action appears to assert that Morosawa discloses performing a treatment with ammonia and nitrogen plasma at 250°C in order to remove dangling bonds in poly-silicon thin film 6 (a step of hydrogenation) and that this treatment corresponds to the step of leveling a surface of a semiconductor film by heating as previously claimed (page 4, Paper No. 20050403). Accordingly, the Official Action appears to assert that removing the dangling bonds in the semiconductor film by heating results in leveling the surface of the semiconductor film. In the claims of the present application, as shown,

for example, in Figures 9 and 10, the degree of leveling is on the order of one nanometer. On the other hand, even if Morosawa's step of hydrogenation results in leveling, the degree of leveling is one the order of one Angstrom, because a dangling bond in a semiconductor film is only terminated by a hydrogen atom.

In order to distinguish the claimed leveling step of the present application from the hydrogenation step in Morosawa and the prior art of record, independent claims 1-12, 19, 20, 47 and 48 have been amended to recite leveling a surface of a semiconductor film by recrystallizing the semiconductor film, instead of heating. This feature is supported in the specification, for example, at page 4, lines 11-15, and page 9, lines 20-26. Morosawa does not teach the above-referenced features of the present invention, either explicitly or inherently. That is, even if it is shown that Morosawa teaches that a treatment with ammonia and nitrogen plasma at 250°C in order to remove dangling bonds in poly-silicon thin film 6 corresponds to a step of leveling a surface of a semiconductor film by heating, this step is not a recrystallizing step, either explicitly or inherently.

Since Morosawa does not teach all the elements of the independent claims, either explicitly or inherently, an anticipation rejection cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 102 are in order and respectfully requested.

Paragraphs 5-8 of the Official Action reject claims 1-17, 19-30 and 49-52 as obvious based on Morosawa, either alone or in combination with one or more of U.S. Patent No. 5,608,232 to Yamazaki et al. and JP 09-186336 to Kudo et al. The Applicants respectfully submit that a *prima facie* case of obviousness cannot be maintained against the independent claims of the present application, as amended.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference

teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Please incorporate the arguments above with respect to the deficiencies in Morokawa. Yamazaki '232 and Kudo do not cure the deficiencies in Morokawa. The Official Action relies on Yamazaki '232 to allegedly teach furnace annealing (page 11, Paper No. 20041210) and on Kudo to allegedly teach irradiating a semiconductor film with laser light in air (page 14, Id.). However, Morokawa, Yamazaki '232 and Kudo, either alone or in combination, do not teach or suggest leveling a surface of a semiconductor film by recrystallizing the semiconductor film. Since Morokawa, Yamazaki '232 and Kudo do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained.

Furthermore, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Morokawa, Yamazaki '232 and Kudo or to combine reference teachings to achieve the claimed invention. As noted above, Morokawa, Yamazaki '232 and Kudo, either alone or in combination, do not teach or suggest leveling a surface of a semiconductor film by recrystallizing the semiconductor film. Further, there is no showing in Morokawa, Yamazaki '232 and Kudo that teaches or suggests that leveling a

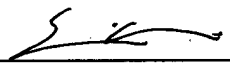
surface of a semiconductor film by recrystallizing the semiconductor film are of any concern, or that these concerns could or should be solved by modifying Morokawa. Specifically, the prior art references do not teach or suggest that a treatment with ammonia and nitrogen plasma at 250°C should or could be replaced with a recrystallizing step or why such replacement would have been obvious to one of ordinary skill in the art at the time of the present invention.

In the present application, it is respectfully submitted that the prior art of record, either alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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